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Realization of benefits under the United Nations Convention on the Law of the Sea: Measures undertaken in response to needs of States in regard to development and management of ocean resources, and approaches for further action

Report of the Secretary-General

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I. INTRODUCTION

1. The General Assembly, by resolution 44/26 of 20 November 1989, had requested the Secretary-General, inter alia, to present to it at its forty-fifth and forty-sixth sessions a report identifying the needs of States in regard to the development and management of ocean resources and the measures currently taken by States and by the competent international organizations in responding to those needs, and to suggest methods and mechanisms for maximizing opportunities for the early realization for all States, during the decade beginning in 1990, of the benefits of the comprehensive legal regime established by the 1982 United Nations Convention on the Law of the Sea. 1/ The report of the Secretary-General (A/45/712) presented to the General Assembly at its forty-fifth session provided a review of the needs of States in regard to development and management of ocean resources under the regime established by the Convention. This constituted the first part of the response to the request of the Assembly. The present report is the second part of that response.

2. In order to obtain the most accurate information on the needs of States, measures being undertaken and approaches for further actions, the Secretary-General, following the adoption of resolution 44/26, addressed a note verbale to all Member States of the United Nations and to Permanent Observers requesting such information. A letter was also addressed to 35 competent international organizations requesting information for the same purpose. At the forty-fifth session, the General Assembly, by its resolution 45/145 of 14 December 1990, welcomed the first report (A/45/712) and requested the Secretary-General to transmit that report to all Member States and competent international organizations, agencies and bodies for their review and to take their comments into account in the preparation of the report to be submitted to the Assembly at its forty-sixth session. Accordingly, the first report was transmitted to all Member States and Permanent Observers, competent international organizations, agencies and bodies, and comments were sought from them. As at 31 October, 33 States, 9 programmes and organizations of the United Nations system, 15 of the specialized agencies and 6 international organizations responded to either or both of the Secretary-General's communications. The present report is based on the information provided in those responses. The Secretary-General wishes to acknowledge the value of all the contributions he has received.

3. The States responding were: Barbados,* 2/ Brazil, Cameroon, Canada, Chile, China, Denmark, Ecuador, Germany, Haiti, Honduras, India, Japan, Kuwait, Mali, Mexico, Morocco,* Nigeria, Norway, Oman, Pakistan, Philippines,* Sri Lanka, Swaziland, Sweden, Switzerland, Thailand, Togo, Tunisia, United Republic of Tanzania, United States of America, Uruguay and Yemen. Responding programmes and organizations of the United Nations system and the specialized agencies were: United Nations Conference on Trade and Development (UNCTAD);* United Nations Development Programme (UNDP);* United Nations Centre for Human Settlements (Habitat); Office of the United Nations Disaster Relief Coordinator (UNDRO); United Nations Environment Programme (UNEP);* United Nations University (UNU); Economic Commission for Africa (ECA),* Economic

Commission for Latin America and the Caribbean (ECLAC)* and Economic and Social Commission for Asia and the Pacific (ESCAP); Food and Agriculture Organization of the United Nations (FAO),* International Civil Aviation Organization (ICAO),* International Fund for Agricultural Development (IFAD),* International Labour Organisation (ILO), International Maritime Organization (IMO),* International Telecommunication Union (ITU), United Nations Educational, Scientific and Cultural Organization (UNESCO), Intergovernmental Oceanographic Commission of UNESCO (UNESCO/IOC),* United Nations Industrial Development Organization (UNIDO), World Bank/International Finance Corporation, World Health Organization (WHO), World Intellectual Property Organization (WIPO),* World Meteorological Organization (WMO),* World Tourism Organization (WTO) and the International Atomic Energy Agency (IAEA).* The other international organizations that responded were: Forum Fisheries Agency (FFA); Organization for Indian Ocean Marine Affairs Cooperation (IOMAC);* Organization of African Unity (OAU); Organization of American States (OAS);* Permanent Commission for the South Pacific (CPPS); and South Pacific Applied Geoscience Commission (SOPAC).

4. The present report also utilizes information submitted by or contained in the records of recent international meetings dealing with relevant issues and in the reports of the representatives of various States presented thereat. Those meetings are as follows:

(a) The First and the Second Conferences on Economic, Scientific and Technical Cooperation in the Indian Ocean in the field of Marine Affairs in the context of the New Ocean Regime (IOMAC I and IOMAC II) and the Seventh Meeting of the IOMAC Standing Committee; 3/

(b) The Expert Group Meeting on Sea Use Planning and Coastal Area Management among States of the Economic Commission for Latin America and the Caribbean; 4/

(c) The first and the second meetings of the Group of Experts of States Members of the Zone of Peace and Cooperation of the South Atlantic. 5/

5. Furthermore, the report takes account of resolutions adopted by intergovernmental bodies within the United Nations system and the deliberations of the General Assembly at its forty-fifth session under the agenda item, Law of the Sea, especially concerning the first report of the Secretary-General (A/45/712). It also draws upon information and records of the United Nations Office for Ocean Affairs and the Law of the Sea (UN/OALOS) which has central responsibility for marine affairs within the organization. The Office is mandated to provide advice, assistance and information to member States, international organizations and others, in the uniform and consistent application of the United Nations Convention on the Law of the Sea, and also addresses the legislative, policy and management implications for Member States of the Convention. The report also draws upon publications and reports of the United Nations system and of other international organizations, both global and regional, active in marine affairs. The work of the Preparatory Committee for the United Nations Conference on Environment and Development, which is to be held in 1992, has also been taken into account.

6. The annual reports and the special reports of the Secretary-General presented to the General Assembly at its forty-third, forty-fourth, forty-fifth and forty-sixth sessions, under the agenda item, Law of the Sea 6/ and other related items, 7/ provide information on the developments in marine related fields, which supplement the information in the present report.

II. DEVELOPMENTS AND DIRECTIONS IN REALIZING THE BENEFITS OF THE NEW OCEAN REGIME

7. The Convention on the Law of the Sea, while providing a well-defined international regime for the rational development and utilization of the oceans resources, has projected the enormous potentials for enhancing the socio-economic well-being of States by expanding vastly their resource endowment.

8. There is a widespread awareness among Member States that the realization of benefits under the Convention can only be achieved by fulfilling a number of requirements and that although considerable progress has been made by many States in addressing those requirements, for a large number of them, especially developing States, the benefits have remained unrealized or realized minimally, and for a number of others, the realization of benefits is far below optimal.

9. Thus, since the adoption of the Convention in 1982, the General Assembly has repeatedly emphasized the increasing need, in particular of developing countries, for information, advice and assistance in their developmental process for the full realization of the benefits of the comprehensive legal regime established by the Convention, and has invited Member States and the organs and organizations of the United Nations system to cooperate and lend assistance to their developmental endeavours. 8/

10. With the passage of nearly a decade, the urgency to benefit from the expanded resource bases have prompted Member States to launch a systematic endeavour, first, to identify what needs to be done; second, to examine what is currently being done; and third, to determine how the gap can best be filled. It is in this context that the General Assembly has called upon the Secretary-General to review the situation and report thereon.

11. There was widespread support in the General Assembly for the initiative taken in requesting these studies, which would assist in galvanizing the human, financial and technical resources necessary for the early realization of the prospects and promises of the ocean's resources. Most importantly, the initiative was also intended to indicate to international organizations and specialized agencies concerned with marine affairs that they should, in accordance with their respective policies and programmes, intensify financial, technological, organizational and managerial assistance to the developing countries in their national, regional or global efforts.

12. The present report provides an overview of the important measures that have been or are being undertaken by States and international organizations, agencies and bodies in responding to many of the needs. It also deals with directions and approaches for the realization of benefits under the Convention, the demands for which, especially in the case of many developing countries, remain as pervasive and daunting today as they were early in the last decade when the Convention was being concluded.

13. As in the case of the survey of needs, presented in the first report of the Secretary-General (A/45/712), the survey of measures included in the present report is based on the responses of a large number of States from different regions covering the whole range of geographic characteristics, socio-economic conditions and the spectrum of legal and political systems. In addition, the report reflects the outcomes and conclusions concerning the management implications of ocean resources development under the new international regime, emanating from interregional cooperative endeavours in marine affairs among States from different continents surrounding an ocean area or basin, with the participation of other countries active in those areas; from the deliberations of experts, policy makers and planners within a region and of interested extraregional States on sea use planning and coastal area management, and also of such experts working within existing interregional cooperative frameworks involving States bordering ocean areas. 9/ The report also reflects a global review of the issues in a related context such as the environment and development.

14. Thus, as in the case of the survey of needs, although the survey of measures included in the present report is in no way exhaustive, the report can be viewed as containing a wide-ranging sample of the spectrum of major measures currently taken by States. Likewise, the suggestions offered by the responding States and international organizations, agencies and bodies do not constitute a comprehensive array of suggested methods and mechanisms by which to achieve maximum benefits under the Convention; rather, taken together, they provide an overall picture of a broad range of necessary actions that could be taken for that purpose during the decade of the 1990s.

15. The level of national activity in the marine sector reflects to a great extent the level of development of the countries concerned. Thus, the needs of States, the measures taken by them and the suggestions offered would be related to the level of their advancement and the progress achieved in ocean resource development and management. As such, the needs, measures and suggestions range from the basics, in the case of those countries which are at a nascent stage in developing the ocean potential provided by the Convention, to advanced ones in the case of those which have capabilities for ocean development and management and are already carrying out marine programmes and projects to benefit from expanded marine resource endowments. To the extent that such a diversity exists in national experience, the two reports of the Secretary-General reflect the whole range. Positive experiences of the more advanced countries can provide a sound basis for action by other States seeking to further their level of ocean resource development.

16. An analysis of the responses shows that for developing countries that are encountering problems in initiating the process of marine development or, if initiated, in progressing beyond that stage, the suggestions and strategies are predominantly related to those overall problems. For developed countries advanced in the process of ocean resource development and management, the suggestions for further action pertain, in most cases, to issue-specific or sector-specific needs. However, conscious as they are of the unfulfilled needs of developing countries in marine development and the importance of formulating development policies and national legislative frameworks that are consistent with the Convention, some of their responses also addressed opportunities and strategies for developing States and the least developed among them. From those myriad suggestions there emerges a broad outline of potentially viable approaches for developing countries.

17. While the specific measures and suggestions for further action are presented in the various chapters and of the present report, the concluding chapter attempts to put together the various elements and outlines possible courses of action for developing countries the needs of which are least fulfilled.

III. NATIONAL OCEAN DEVELOPMENT POLICY

18. The new ocean regime under the Convention on the Law of the Sea has brought to the fore the potential of the oceans' resources and the other uses of the oceans; it has focused attention on their prospective contribution to national economic and social development. It has also provided a framework for the development and management of ocean resources, pointing to an integrated approach to marine affairs by emphasising (in the third preambular paragraph) that the problems of ocean space are closely interrelated and need to be considered as a whole.

19. The interrelated dimensions of development and management of ocean resources, as highlighted by the Convention, were emphasized by a number of respondents. These include: (a) interrelationships between exploitation of resources and other uses of marine areas; (b) interaction between the rights of States and their respect for the rights of, or duties to other States and the international community; (c) linkages between national and international activities as well as the interaction among various levels of intra-national activities, federal, state and local; (d) interrelationships between marine development and the protection and preservation of the marine environment; (e) balance between exploitation and conservation of marine resources as well as trade-off between their long- and short-term values; (f) positive and negative externalities among various sectors; (g) interrelationships between traditional and new marine industries, as well as between artisanal and industrial enterprises; and (h) comprehensive requirements as contrasted with sectoral requirements for data and information, marine scientific knowledge, marine technology, human resources, financial resources and infrastructures. The interrelated nature of marine affairs and the need for a

coordinated response to marine development issues have consistently been reiterated by the General Assembly itself in its annual resolutions on the law of the sea.

20. A coherent national stewardship of ocean resources and uses can best be articulated through a national ocean development policy that addresses such diverse and complex interrelationships. As has been pointed out (by Switzerland, for example), a better overall understanding of various implications of the Convention for marine resource development should lead to the establishment of a rational marine policy. Such an approach to ocean resource development also facilitates the incorporation of the policy objectives and national priorities for ocean development with national policies on food, energy, raw materials, industrial expansion, technological advancement, human resource development and environmental matters.

21. In that context, a number of States have indicated that they have undertaken or are in the process of undertaking appropriate measures to adopt national policies or plans (Barbados, Brazil, India, Pakistan, Thailand). Issue-based endeavours were the starting point in some countries and as that activity developed a comprehensive plan for the development and management of all ocean resources within extended jurisdictions was elaborated. In some cases, national ocean policies initially focused on the protection and development of the resources of coastal areas and measures that were taken in that regard were subsequently expanded into comprehensive ocean policies. Available national marine policies or plans take different forms and reflect the priorities chosen by the States concerned. While for States such as India, Pakistan and Thailand, for example, the focus is on development of their marine areas, the marine policy of the Netherlands is an example of an approach whose focus is based on environmental issues. Another example, at the sub-national level, is a comprehensive land use and coastal zone plan that extends seaward to constitute an integrated coast-ocean management plan of the State of Oregon, United States of America.

22. In securing a coordinated approach to ocean resource development and management, one significant measure that has been manifested in national experience and mentioned by several responding States is the establishment of a cohesive institutional machinery with a a marine orientation and focus that is responsible for the integration of policies and plans of marine activities traditionally dispersed along sectoral or functional lines (Brazil, China, Colombia, India). While the specific form of the institutional machinery varies, the essential element common to all of them is the coordination function among national agencies with competence in marine-related activities, which is carried out at a level within the Government, important enough to be effective.

23. Many States, though they have not adopted national ocean policies or plans _per se_, have undertaken facilitating measures. Many respondents have noted that, _inter alia_, policy reviews have been completed or are under way; that existing institutional machinery is being examined with a view to deciding on the appropriate coordination mechanism; that new legislation is to

be adopted or existing legislation adapted to create an effective legal framework consistent with the Convention, as a step towards national policy formulation; that they are collecting data and information required for ocean policy development; and that they are learning from the experiences of other States in ocean policy and management, through expert meetings, seminars and consultations.

24. There is global concern to ensure the preservation of international rights and interests consistent with the Convention. In particular, these relate to the international freedoms of navigation and communication in national maritime zones; resource-related interests in the high seas adjacent thereto, particularly with regard to straddling stocks and migratory species; and mitigating the transboundary and global impact of degradation of the marine environment. Thus, the formulation of sound ocean development policy and effective ocean management consistent with the application of the legal regime under the Convention is widely supported.

25. Bilateral aid from donor countries, support from governmental agencies, assistance from international organizations, technical assistance from international agencies with sectoral competence in marine affairs and assistance from international development and aid institutions, are made available to support national endeavours and regional initiatives aimed at the development of appropriate policy and the regulation and management of multiple ocean uses.

26. At the bilateral level, measures for assisting developing countries in the formulation and implementation of overall ocean development and management approaches have been described by responding Governments. Such Governments and governmental institutions design development assistance in recognition of the fact that frequently countries lack the most rudimentary ocean policy and management expertise and infrastructure. They also lack the financial resources to exploit their new resource base and many of these less developed countries are precluded from realizing any substantial benefits from their expanded resource base. 10/ Assistance has also been provided by Governments, technical and academic institutions for the establishment of national institutional machinery for the formulation and implementation of ocean development plans. 11/

27. Regional measures have contributed significantly to national ocean development through the sharing of expertise, experience, facilities and infrastructure, and the pooling of resources and markets. Regional measures are also relied upon by States of many regions consequent upon the transboundary existence or movement of resources and to address the transboundary nature of marine environmental problems. In the formulation and implementation of national ocean policies, regional cooperation is particularly effective with respect to data and information collection, marine scientific and technological advancement, human resource development and protection and preservation of the marine environment. Regional cooperation also facilitates conservation and management of living resources, assessment of non-living resources and efficient conduct of maritime transport.

Experience also indicates that States have achieved greater success through regional initiatives in gaining access to international assistance, whether economic or technical, given that joint action by States of a region enhances the cost-effectiveness of donor assistance, thus eliciting more favourable donor responses, when compared with competing approaches for assistance by individual States.

28. Many respondents have cited examples of the contribution of regional measures to their national ocean policies, pertaining to overall marine affairs, which are cross-sectoral and multifunctional, 12/ particularly those emanating from "dedicated" regional bodies. Such dedicated institutions for marine affairs range from those which address the regional perspectives of the marine policies of its members to those which facilitate the regional dimensions of the marine policies of their members by, inter alia, coordinating marine geological and geophysical research in the region, processing and distributing marine geological and geophysical data from the region, assisting their members in investigating and managing nearshore and offshore resources, and training nationals in the implementation and management of their work programmes; and to those which have an integral role in the formulation and implementation of the national oceanographic plans of its members. 13/

29. Variants of the regional approach extend from the interregional cooperation among States surrounding an ocean basin to the subregional development of a common ocean development strategy, by States that have commonalities of interests, whether political, geographical, environmental or a combination of these factors. 14/

30. At the international level, the activities of international organizations have also facilitated States in the formulation of their national marine policies. Assistance has been provided by UN/OALOS to Governments in carrying out preliminary work leading to marine policy formulation (in Morocco, Senegal and the United Republic of Tanzania, for example), such as reviews of national legislative requirements to conform with the Convention and to facilitate efforts at regional cooperation. In some cases, efforts to formulate and implement national ocean development plans have been supported by technical and financial assistance from the World Bank and UNDP (Philippines, for example). Exchange of information, analysis and experience with regard to ocean policy and planning through meetings and symposia of international groups of experts is another measure that has contributed to the endeavours of developing countries in the field. The provision of information and analyses through research studies can also be mentioned in this context.

31. Coordination among and concerted action taken by international organizations with comprehensive or sectoral competence in marine affairs have facilitated assistance to Member States regarding the formulation and implementation of national marine policies and plans. For instance, UN/OALOS and relevant specialized agencies have participated alongside regional bodies on technical missions to States and lent support to the development of marine projects and preparation for the formulation of rational marine policies

relevant to the subregions or regions concerned. 15/ The implementation of marine-related work programmes of international organizations within an inter-agency framework or taking into account the interrelated nature of marine affairs, as well as the formal and informal coordination within the system of international organizations, can also be considered as fostering integrated marine policies at the national level. The Philippines and Morocco, in their responses, refer to benefiting from participation in various international endeavours in that context. Japan refers to its cooperation with international organizations as a contributing measure for integrated ocean development in developing countries.

32. Another set of measures of international organizations is also noteworthy in terms of providing an overall marine focus and thus implicitly promoting a coordinated approach to marine affairs. The annual report of the Secretary-General on developments with regard to the Convention and the United Nations activities to keep Member States abreast of such developments constitute an important measure.

33. Notwithstanding the above measures, ocean policy needs, emanating from the Convention, are among the least fulfilled, and the suggestions from the respondents are wide-ranging. Further measures suggested include intensification and expansion of the existing measures, such as technical assistance from international organizations in identifying and assessing policy options as well as in the preparation of national ocean policies and plans, addressing the priorities and resource constraints (Cameroon, Morocco). Many respondents and in particular Chile and the Philippines suggest technical and financial assistance for the formulation and implementation of national ocean plans and the establishment of requisite institutional machinery. Some respondents have suggested seminars and workshops at the regional and international levels to exchange expertise and experience in ocean policy and management (Morocco). Several respondents have suggested assistance in collecting, assembling and effectively inputting data and information to the policy formulation exercise and in obtaining marine scientific inputs to ocean policy through international cooperative projects (Switzerland); in resource assessment and research thereto (Chile); in training policy-making and management personnel (Sri Lanka).

IV. INTEGRATED MANAGEMENT IMPLICATIONS

A. National legislation and the requirements of the Convention

1. Legislative imperatives

34. As the Convention moves towards entry into force, 16/ there is an increased awareness among States of the need to ensure consistent application of the Convention as well as the need for harmonization of national laws with it. The General Assembly has emphasized that need 17/ and States are conscious of the fact that a stable legal order is a precondition to resource development and the proper management of national maritime zones (see A/45/712, para. 27). The vast majority of coastal States have established national laws or made constitutional amendments defining these zones. Legislation that is consistent with the Convention, establishing territorial seas not exceeding 12 miles, has been adopted by 133 of the 148 coastal States, and legislation establishing 200-mile exclusive economic zones have been adopted by 82 States and a further 16 States have adopted fisheries zones of 200 nautical miles. Some have adopted legislation establishing consistent continental shelf jurisdiction as well.

35. While such legislation secures for States their extended maritime jurisdictions, several have expressed the need to elaborate the legal regimes within their zones of national jurisdiction. Existing legislation may, and frequently does, contain lacunae in relation to the interactive rights of coastal States and of third States even within those zones. Several respondents have indicated the formidable task presented by the need to review their legislation in the context of the extended maritime zones, in relation to new and intensified marine activities, in defining and giving effect to conservation measures for living resources, and in balancing environmental safeguards with development. Consequently, the assistance of international institutions and support from aid organizations and donor countries have frequently been sought in carrying out the task of legislative review, adjustment of existing laws and formulation of new legislation to fill lacunae.

36. Measures aimed at assisting developing countries in integrating the requirements of the Convention into their national legislation are being undertaken by international organizations, in particular UN/OALOS. Studies analysing the legislative history of important provisions in the Convention are published by the United Nations with a view to meeting the needs of States for better understanding of the Convention and its uniform interpretation. Responding to the needs of States to ensure consistent practice in the implementation of the Convention, information and analyses of State practice, particularly as contained in national laws, is provided in a series of publications. Specific assistance has been provided to developing countries to fulfil their legislative needs. Agencies of the United Nations have done so in relation to specialized legislation and regulations, for instance in fisheries and on environmental matters. International funding could be

forthcoming where the legislative needs are a constituent part of needs for ocean development policy and integrated management, as a component of economic and social development.

2. Regulatory frameworks

37. Many States have taken or are in the process of taking measures detailing the regulatory provisions and administrative or procedural requirements for the conduct of activities in their maritime zones. In some cases such regulations and procedures cover access to resources, conditions for development, exploration and utilization of resources, mobilization of finances for resource development, accommodation of other activities and environmental requirements.

3. Compliance with the Convention

38. Consequent upon coastal States securing extended maritime zones is the need to define and publicize the limits of such zones, commencing with baselines and extending to the actual limits of the territorial sea and exclusive economic zone or the continental shelf as the case may be. Many States have demarcated the boundaries including the baselines with the use of a uniform coordinate system and, in a number of cases, they have produced large-scale charts. Steps have been taken by most of those States to give due publicity among all States of their coordinates and charts. The Convention specifies such requirements.

39. In order to assist States in the application of certain provisions of the Convention that involve a considerable degree of technical complexity, practical guides are provided by UN/OALOS (guides to such subjects as baselines and the Consent Regime for Marine Scientific Research have been published). Requests have been made by many responding developing countries, for the intensification of such assistance in the application of the complex provisions of the Convention.

4. Bilateral arrangements

40. In the delimitation of maritime boundaries between States with adjacent or opposite coasts, bilateral agreements have been reached and implemented in a number of cases, and negotiations are under way in many, with agreements of an interim nature pending the negotiation of final agreements in some cases. Some of these interim arrangements involve joint resource development, especially of hydrocarbons. However, there is a prevailing need in the cases of many States for the very initiation of the delimination process, and assistance in this regard has been sought.

5. Surveillance and enforcement

41. The implementation of legislative measures necessarily calls for surveillance and enforcement measures. Surveillance and enforcement are essential prerequisites for effective management of maritime zones and rational development of ocean resources. Various measures have been undertaken by States, such as formulation of administrative and law enforcement procedures; establishment and strengthening of institutions or agencies, for example, coast guards; acquisition and operation of surveillance vessels and aircraft; acquisition and utilization of requisite equipment, including remote sensing equipment; and development of programmes and methods for effective monitoring and surveillance.

42. In view of the fact that the requirements for capabilities, vessels and equipment for monitoring and surveillance of vastly expanded maritime zones are quite extensive and often beyond the means of individual developing coastal countries, cooperative regional arrangements and programmes have been developed in some instances (the South Pacific States, for example) enabling the developing countries involved to take advantage of economies of scale that are achievable in those activities.

B. Information and data

43. Accurate, comprehensive and current scientific information and data are the underpinnings of all policy determinations and management decisions. Besides their critical significance with respect to ocean resource development, they are essential to the fulfilment of obligations under the Convention relating to delimitation, conservation, environmental preservation, regulation of maritime transport, provision of aids to navigation and overflight. The expressed needs of coastal States related to the development and application of scientific information and data in decision-making have been recorded in the first report of the Secretary-General (A/45/712, paras. 30-40 in particular).

44. The comprehensive data needs include a variety of physical, chemical, biological and environmental parameters. While the needs are specific to the field of activity involved, there is a range of basic data that is common to more than one activity. In addressing sustainable development most responding States and competent regional and international organizations described in detail their efforts to obtain and interpret the comprehensive physical, chemical and biological data, as well as baseline data on the level and effects of contaminants that in conjunction with other data parameters are required for those purposes.

1. Physical, chemical and biological data

45. A number of measures at the national, regional and global levels have been taken with a view to acquiring relevant physical data and information as they relate to bathymetry and ocean bottom topography. For example, where

national capacity exists, as in the United States, the National Ocean Service (NOS) used the multi-beam sounding system to provide full coverage measurements of the ocean floor, acquiring the bathymetric chart for the continental shelf and slope in more detail and precision than had ever been achieved before. The bathymetric chart produced has been used to define regional features and resource conditions of the surveyed area. An active regional endeavour that is achieving results is the South Pacific Applied Geoscience Commission (SOPAC), which conducts geological, bathymetric and morphological surveys of the coastal and offshore environments of its member countries and uses the data from the surveys to produce maps of the coastal and nearshore zones for use in planned coastal development, hazard protection and mineral exploration. At the international level, activities that are of benefit to several countries, especially the developing countries, include those under the auspices of the Intergovernmental Oceanographic Commission (IOC). Its Regional Bathymetric Chart Programme makes available to the various scientific, technical and economic disciplines, a chart established according to standardized guidelines and on identical scales (1:1 million). Progress has been achieved in several regions: the Mediterranean and the Black Seas, Caribbean, Gulf of Mexico and adjacent areas, the Western Indian Ocean, and Central Eastern Atlantic; plans and proposals have also been drawn up for the Red Sea and Gulf of Aden, the Central Indian Ocean, the Southern Atlantic and the Western Pacific Oceans. With respect to smaller-scale atlases, in addition to the periodic updating of the General Bathymetric Chart of the Ocean (GEBCO) and the completion of the geological/geophysical atlas of the Indian Ocean, work is under way for the preparation of atlases of the Atlantic and the Pacific Oceans.

46. Other types of physical data and information relate to hydrography and meteorology. Projects are implemented by international organizations to assist in laying a groundwork for hydrographic surveys, drawing and publishing navigational charts and hydrographic/tidal information, providing technical support in framing national policies on maritime jurisdiction and delimitation of maritime boundaries and related matters. In supporting measures to improve the hydrographic services of Member States, IMO illustrated such measures that it had taken in responding to a request from the Government of Bangladesh. IMO noted that further assistance will likely increase over the coming years for these types of projects.

47. It has been noted that developing countries require adequate bathymetric charting, but most lack a hydrographic service. It has therefore been suggested that in order to create a standardized chart for scientific and other tasks, general interest in hydrography needs to be aroused by fully involving them in the process of producing the chart through training programmes and so on.

48. Measures are being taken at the international level to support national activities requiring meteorological/oceanographic data and services. Such support responds to user needs for marine meteorological forecasts and warnings, ocean wave forecasts, service analyses and forecasts for severe to extreme conditions, sea surface temperature, currents, areas of ocean

upwelling, storm surges, salinity data and other climatological meteorological/oceanographic data. WMO, on request from Governments, provides experts, maintains a global exchange scheme for data, sponsors training courses, advises on the availability and access to satellite data, prepares and maintains various operational manuals and handbooks, and installs and tunes hardware and software for data management.

49. Chemical and biological data for national needs can be addressed through global programmes by participating in and promoting such programmes.

2. Baseline data

50. Environmental management, with the general objective of the protection of human health and the marine environment requires the study of changes in the physical and chemical characteristics of the marine environment. The consequent effects on the biota need to be evaluated. As part of this process it is essential to have a description of the initial state of the marine ecosystem, that is, a "baseline". Under the UNEP Regional Seas Programme, regional action plans are formulated by the Governments concerned and all action plans usually contain an environmental assessment component. Within this component, activities are undertaken to assess and evaluate the causes of environmental problems, their magnitude and impact on a region. The activities include baseline studies, research and monitoring of the sources of pollution, levels and effects of marine pollutants, and so on.

51. International assistance is available for the study of contaminants in living and non-living materials in the marine environment. IAEA records baseline data on radioactive contaminants that are of value to the international community and to individual States.

3. Data management

52. Decision-making in respect of ocean resource development and management has to be based on a flow of scientific information and data (produced or collected) through processed data (reduced and/or analysed), and including substantive descriptive propositions which may be used to make projections.

53. With regard to adequacy of data for marine environmental management, its storage and quality control, it is noted that while much information has been collected over the last decade on the marine and coastal environment that could contribute to determining long-term trends in local conditions (aerial photographs, remote sensing images, tide and weather records, and statistics or observations on resource uses), it is scattered and frequently lost because it has not been adequately archived and preserved. Where it still exists, it is often inaccessible and unutilized because it has never been organized and managed to facilitate access. UNEP notes that some types of data such as certain pollution analyses are of little value because of poor or improperly applied methods, insufficient or irregular observation or sampling,

inadequately trained personnel, poorly maintained instruments and contamination from careless procedures during sampling or analysis.

54. IOC notes that in many countries where marine data are collected on an operational basis, responsibility is split between various departments of government, often resulting in duplication of effort. Nevertheless, owing to the diversity of agencies involved in marine activities (fisheries, mariculture, ports and harbours, navy, coast guard, transport, tourism, marine research stations, oil exploration/extraction and refining), the body of data relating to the marine environment is often more extensive than might appear at first sight. IOC also noted that data quality is variable and there is often a difficulty to interface different sets.

55. With respect to data archiving, under a UNEP-funded project in coastal erosion control in West and Central Africa it was noted that coastal scientists often have difficulty in obtaining pertinent literature. While the required data had already been obtained, it was not in the public domain. Reports contracted by Governments are generally considered their property and therefore not released, and even when released, circulated in an inadequate manner.

56. With regard to the physical and management infrastructure to collect and analyse data and statistics, many developing countries are unable to assess their problems. Among other things, they lack the facilities and trained personnel to analyse data and statistics, to generate policy options and take management decisions based on the best data available, and to apply management measures to enforce them. According to UNEP, environmental management frequently requires laboratories and other research facilities that either do not exist or are often not efficiently maintained and supported.

57. As a response to some of the data management needs, WMO reported that it is directly involved in the implementation, coordination and management of a variety of ocean-related activities at the global and regional levels, in particular, collection, global distribution and processing of ocean data in support of operational meteorology and oceanography, and of climate monitoring, research and prediction; preparation and publication of a monthly bulletin containing such information.

58. WMO also assists national meteorological services to develop and expand their observing, communications and data-processing facilities within the marine sector and coordinates and assists in the provision of regional and global data and products that may be relevant to national maritime activities.

59. Measures being taken by UNEP to ensure the global comparability of data generated through regional monitoring programmes in different geographic areas by a large number of scientists and technicians, include monitoring being based on a common methodology that consists of the use of uniform reference methods and of reference materials, and intercalibration exercises and quality control of data.

60. As regards data on radioactivity, data management is facilitated by the definition prepared by IAEA of high-level radioactive wastes or other high-level radioactive matter unsuitable for dumping at sea. IAEA has also established a computerized database with information on the date, location, depth, quantity, weight and type of containers and qualities of radionuclides that had been dumped in the marine environment from all sources. The rationale for the inventory is to establish an information base that can provide more accurate data for assessing the impact of radioactive waste dumping operations in the sea and serve as a deterrent against the disposal of more waste.

61. The Training, Education and Mutual Assistance Action Plan for 1991-1995 of IOC also contains activities designed to respond to needs expressed. The plan will focus on the integrated use of data from different disciplines and branches of marine science, by providing guidance and training in biological, physical and chemical sampling of nearshore and coastal waters; practical skills and experience in the application of standardized techniques for measuring those parameters; statistical and mathematical analysis of data, including the use of software packages; use and analysis of satellite-sensed imagery and aerial photographs of coastal-zone and shallow-water habitats; and the use and application of the Geographical Information System (GIS).

62. An example of international measures to assist developing countries in marine data management being taken at the bilateral level is funding by Canada's International Centre for Ocean Development (ICOD) to support the South Pacific Applied Geoscience Commission (SOPAC) training of Pacific Islands nationals in the operation of a computerized geological data and information management system developed by SOPAC.

C. Development of national capabilities

1. Marine science and technology capabilities

63. The Convention on the Law of the Sea recognizes the crucial importance of marine science and technology for realizing the benefits and carrying out the responsibilities set out in the new legal regime for the ocean. The needs in relation to the development and strengthening of marine science and technology capabilities in States are well-recorded (see A/45/712, paras. 41-48, in particular); States and international organizations have provided information on a wide range of measures that address many of these needs.

(a) Integrated development of capabilities

64. Recognizing the fact that the development and strengthening of marine science and technology capabilities is an integral component within the integrated marine management framework, some States have adopted measures in a corresponding manner, by entrusting the agency created for the purpose of integrated marine management with responsibilities for research, including fundamental research, as well as the development of uses of research outcomes,

development of marine technology and technical collaboration with national and international agencies and institutions (India, for example). Some States, in view of the cross-sectoral, interdisciplinary and multifaceted nature of marine science and technology, adopted measures to address the matter in an integrated manner, in particular, through the establishment of national institutions or centres dealing with marine resources in an overall fashion (Thailand, for example).

(b) Marine science institutions, programmes and research vessels

65. The establishment and strengthening of marine science and research institutions, acquisition and utilization of research vessels, equipment and skills, and implementation of research programmes are important measures undertaken by States (reported by Brazil, Ecuador, India and Pakistan). Increasingly, the research programmes undertaken in developing countries are application-oriented and, in many cases, are specifically geared to development activities for marine resource exploitation and management projects. For instance, Brazil describes its comprehensive research programmes for resource assessment and continental shelf delimitation; Ecuador describes its research programmes for living and non-living resource assessment and prospecting activities; and India refers to development of applications of research results.

(c) Joint programmes

66. Joint programmes, including joint oceanographic expeditions with bilateral or multilateral partners, in many cases organized and implemented in cooperation with competent international organizations, can be effective measures for the development and strengthening of marine science capabilities in both developing and developed countries; there are many instances of such expeditions. While developing countries have noted the benefits derived from such programmes (Thailand), many developed country respondents emphasized the importance of such programmes and indicated the assistance provided to developing countries. As examples, Japan notes that it is undertaking cooperative programmes with competent international organizations such as FAO, UNESCO, IMO and UNEP in order to contribute to the development and management of ocean resources; Norway notes the assistance provided by its research vessel to developing countries towards reaching the national benefits possible from the new ocean regime, primarily through assistance in the assessment of resources in the exclusive economic zones and in fisheries management, Norway also adds that in response to ongoing needs of developing countries, new development assistance programmes of a similar nature are being initiated.

(d) Measures of international organizations

67. At the international level, the measures undertaken by the international organizations contribute significantly to the development and strengthening of national marine science capabilities in developing countries. Following the identification of needs of States and the guidance given by them as to how best to respond to these needs, IOC, for instance, undertakes a number of

measures under its Training, Education and Mutual Assistance Programme. These involve various training-related measures, promotion of cooperation and mutual assistance between the developing and developed countries, including multilateral oceanographic centres, programmes and expeditions, and development of technical assistance projects attracting assistance from donor countries.

68. The cooperation between developing coastal States and developed researching States in relation to research programmes of the latter undertaken in the maritime zones of the former is worth noting. In this connection, in relation to the continuing need for well-defined rules, regulations and procedures in the practical application and implementation of the marine scientific research regime incorporated in the Convention, which sets out the provisions relevant for coastal States and researching States, the United States of America mentions the development, by the Group of Experts convened by UN/OALOS, of draft research clearance procedures, application forms and national regulations that could be widely acceptable.

69. With regard to the facilitation of marine scientific research projects of a global nature, sponsored by Member States in cooperation with intergovernmental organizations, the mechanisms contained in the Convention provisions (art. 247) are noted (United States of America).

(e) Regional centres of marine technology

70. With regard to the development of marine technology capability, one measure specifically mentioned in the Convention is the establishment of regional centres of marine technology. Such centres are acknowledged as efficient ways of providing opportunities for the exchange of know-how between developed and developing countries, in a region working together in projects aimed at solving common problems, thus responding both to technological challenges and to the problems of building industrial capabilities and professional networks in developing countries. In this context, as an example, a Caribbean Centre for Marine Industrial Technology, focusing on the development of environmentally sound marine technology, is being promoted by UNIDO. A distinguished feature of the Centre will be industrial applications and examination of areas of cooperation among private entrepreneurs from various countries.

(f) Further measures

71. The contributions of the measures described above in fulfilling the needs of States with regard to marine science and technology have been important, but a considerable extent of needs still exists. As IOC has pointed out, provision of substantial assistance is necessary for developing Member States to enhance their capability in marine science and related matters, in order to help them in benefiting from the enlarged opportunities and responsibilities provided through the extended maritime jurisdiction of coastal States; in the diversification of ocean uses and the evolution of national goals in marine affairs; and in the development of scientific knowledge and new technology.

Requirements for assistance are further substantiated by the need to study and monitor global climate and other changes on global, regional and local scales, and by the need to formulate marine policies for development and management of large sea areas under national jurisdiction.

72. As to suggestions for addressing further the needs in relation to marine science and technology capabilities, most respondents have included, among other things, the continuation and strengthening of existing measures. For example, mention has been made of assistance for equipment and for the establishment and maintenance of research facilities (Mexico and Morocco); assistance in the modernization of existing research vessels, acquisition of equipment and vessels, in some cases, dedicated to specific programmes, such as hydrographic survey or environmental monitoring, and implementation of research projects (Brazil and Pakistan; also UNEP); bilateral or multilateral survey cruises (SOPAC).

73. Recognizing that partnership amongst countries/institutions is essential in dealing with these needs, in particular, new lines of research, the introduction of advanced technologies, the monitoring of environmental changes and the management of resources in the coastal zone and open ocean, the strategy suggested (by IOC, for example), is to promote such partnership between developing and industrialized countries, based on interests in achieving agreed common objectives. Such partnership should become an essential element in promoting and strengthening activities on training, education and mutual assistance among Member States, in fostering scientific and technological transfer of knowledge to developing countries and in reducing the scientific and technological gap between developing and industrialized countries.

74. With respect to methods and mechanisms to respond to the needs in relation to marine science and technology capabilities, the Group of Experts on the Law of the Sea of the States Members of the Zone of Peace and Cooperation of the South Atlantic suggests exchange of information and expertise in surveying, mapping and investigations related to resource assessment, stock taking and inventory of marine resources; sharing results of research and investigation through exchange of data and publications, exchange of visits and subregional and regional seminars, workshops and so on; and promotion of joint ventures intended, inter alia, to encourage strengthening of technology capabilities to develop marine resources. The role of joint ventures in strengthening the technology capability of developing countries is also emphasized by ECA.

75. Taking into account the fact that building a nation's marine science and technology capacity is inherently a lengthy process, and because it takes time to train people, acquire mature experience and accumulate knowledge and data about local marine situations, one strategy suggested (by UNEP) is to make arrangements that allow for longer-term involvement, such as "twinning" of institutions in developed and developing countries, which can provide the continuing and evolving support necessary for effective strengthening of national capacities.

76. With respect to further efforts in the implementation of the marine scientific research provisions of the Convention, the United States suggested that the approach to be pursued is to continue dialogue with various coastal States and international bodies to encourage an appropriate interpretation and implementation of the provisions, to encourage bodies like the United Nations (UN/OALOS) to continue efforts to promote the implementation of the provisions and, specifically, to build on the outcomes of the Group of Experts Meeting, mentioned above, by pursuing research clearance procedure discussions with relevant States.

77. With respect to cooperative research programmes with the participation of States and competent international organizations, the United States suggested that the approach to be pursued is to encourage the international organizations to assist sponsoring States in the implementation of global research projects. In response to the concern that the procedure for cooperative research programmes incorporated in the Convention is not widely used, one suggestion (by the United States) is for the intergovernmental organizations involved to play increasingly important roles in implementing the procedure.

2. Human resources development

78. The predominant needs for requisite human resources for the development and management of ocean resources have been pointed out by States (see document A/45/712, paras. 49-56, in particular). In response to these needs, a number of measures have been undertaken by States, nationally or internationally, and by international organizations.

(a) Education and training: curricula, training programmes, scholarships

79. Addressing the need for a well-balanced approach in the provision of training in marine sciences and in specialized fields in the development of education and training programmes, most States and international organizations undertake, to the extent their capabilities and resources permit, measures that aim for basic marine science education at the secondary and tertiary levels as well as training in specialized fields related to ocean development and management.

80. With respect to basic marine science education, specific measures include the development of educational materials and curricula (IOC, for example). Another measure (by IOC), designed to assist marine science teachers and trainers, has been the preparation of recommended guidelines on the development of marine science and related curricula.

81. Awards of scholarships, fellowships or grants for the purpose of human resources development in basic marine science and in specialized fields are ongoing measures worldwide. Human resources development in developing countries is facilitated through such awards from institutions and Governments in developed countries, as well as those in other developing countries, and from international organizations.

82. Technical assistance, financial assistance and provision of facilities and equipment in the organization and implementation of training courses and workshops in marine-related matters, including shipboard training, at the national, regional or global levels, constitute important measures for human resource development. Numerous examples exist of such measures as reported by many respondents; as illustrations, mention can be made of training courses, workshops and seminars and so on in marine science and specialized fields (IOC); meteorology and data management (WMO); coastal geology and marine geophysics (ESCAP); related field programmes (SOPAC); law of the sea and ocean management (UN/OALOS, ECA, ECLAC); exclusive economic zone management and marine development (International Ocean Institute). In many cases, financial support is provided by developed countries or international organizations for training courses and programmes, and to participants from developing countries (UNDP, for example).

83. In response to the identified needs for managerial skills required to perform the tasks related to ocean resource policy and management, training programmes, in many cases, have been developed placing emphasis on management expertise. SOPAC, for example, states that management training is a new component introduced in its training programme recently.

84. Provision of financial and technical assistance in the establishment of training institutions such as marine training centres constitutes an important set of measures. UNDP, for instance, notes its financial assistance for setting up a marine training centre in Pakistan. WMO notes provision of technical assistance in setting up regional training centres in meteorology.

85. In the formulation and implementation of measures, in the form of marine research projects and training, for human resources development in marine-related matters, the success of the regional approach has been noted by many respondents. At the regional level, States can benefit from economies of scale in utilizing regional facilities and expertise and from opportunities for strengthening knowledge and skills through interaction among regional participants. For example, shipboard training was provided through a recent regional cruise for the West African continental shelf studies carried out under the auspices of IOC, with the participation of local scientists on board a Nigerian research vessel.

86. In recognition of the fact that a number of important programmes, undertaken under the auspices of the international organizations, require the services of trained personnel at the national level for their effective implementation, a growing trend has been to include training as an integral component of the programmes themselves. For example, the large-scale ocean research programmes of IOC, the global meteorological programmes of WMO, the regional seas programmes of UNEP - all of these programmes call for an effective participation of personnel from relevant developing countries for their successful implementation and training is thus a built-in component of these programmes.

(b) Further measures

87. Notwithstanding the accomplishments of the various measures, especially in the form of training, overwhelming needs for human resource development in marine-related matters continue to persist, as indicated by States and international organizations. At the most recent session of the IOC Assembly, for example, delegates from developing Member States emphasized the need for their countries to have their indigenous national cadres of well-trained scientists, technicians and managers to strengthen the marine science capabilities of their countries.

88. Numerous suggestions have been made by States and international organizations for further measures for human resource development in the field of marine affairs. To begin with, many States have suggested the intensification and expansion of the existing measures, in particular, improvement in the education system, including at the tertiary level, in the field of marine science and, no less importantly, in the fields related to ocean management such as law, economics and administration (suggested by Cameroon and Morocco, for example); training of scientists, technicians and specialized personnel through awards of scholarships (Cameroon, Mexico, Uruguay and several other States); development of skills through exchange of interns (Mexico); reinforcement of expertise through seminars and workshops at the regional and international levels (several States).

89. Suggestions (by UNEP) for further measures include support for specialists for high-level training that may require extended periods of overseas study; implementation of in-country training programmes considered effective because of the closeness to the reality of the work opportunities; and the provision of individual attachments or on-the-job training in some fields (also suggested by IOC). Suggestions by IOC, based on the ideas expressed by its Member States, include continued training of national experts through the organization of successive training courses to keep up to date in their respective fields of work; follow-up actions in order to provide new knowledge and techniques; further development and provision of educational materials such as marine science education modules; dissemination of marine scientific knowledge through audiovisual techniques and the use of microcomputers; and utilization of new technology such as remote-sensing imagery, distance teaching and multimedia learning packages.

90. In response to the need to promote individual training to success, the suggestions include increasing support to scientists to carry out research in advanced or well-equipped laboratories, in addition to provision of assistance to participate in international meetings; study grants to be given for longer periods to assist research activities, including obtaining advanced degrees; close partnership, particularly in arrangement for research facilities at host institutions as well as on board research vessels.

91. A major problem in developing countries is the rapid turnover of trained personnel through financial attraction of the private sector or overseas employment. Thus, UNEP points out, training efforts are considerably wasted

through this brain drain, and vacant positions that inevitably interrupt research, monitoring and management programmes. To address this problem, training must be accompanied by sufficiently attractive conditions of service and high enough salaries to retain trained personnel and ensure continuity in management programmes (UNEP).

92. The intensification of the regional approach has also been suggested by many States and international organizations. Another strategy envisaged by international organizations is to intensify the training components of their programmes.

3. Financial resources

93. The overriding needs for financial resources for the full realization of the benefits of the comprehensive legal regime established by the Convention are pervading issues in any deliberation on marine affairs, including in the General Assembly itself (see A/45/712, paras. 57-67, in particular). The measures taken to address these needs at the national, regional and global levels are varied and numerous, although, perforce, developing countries look towards assistance measures from developed countries and international organizations.

(a) Inducements for domestic investment

94. At the national level, Governments allocate funds from the regular budget and also often from the capital account to their marine development efforts. Public sector funds are utilized predominantly in the development and maintenance of infrastructures and the provision of basic services and, in some cases, in resource development and exploitation projects.

95. Increasingly, public sector funds are being utilized to create the necessary conditions for a favourable investment climate so that finances from the private sector can be attracted to marine development projects. One of the measures in this context has been the establishment of stable and unambiguous resource regimes, through the promulgation of legislation, formulation of clearly specified regulations, rules and procedures, favourable to investors and minimizing the cumbersome and lengthy involvement with the regulatory agencies and, most significantly, offering an incentive structure for private entrepreneurs. The Fishery Management Acts of a number of countries and the Marine Mineral Act of India exemplify such regimes.

96. Going beyond the mere establishment of resource regimes in order to facilitate the transition from a potential project to a commercially attractive "bankable" marine project, many States carry out a requisite extent of pre-investment activities. An additional advantage that can be reaped through such activities is that of economies of scale.

(b) Mobilization of external resources

97. Concerning measures at the international level, direct private investment from developed countries in the marine sector of developing countries takes place to a considerable extent. In most cases, such flow of capital is affected through joint ventures between entities from developed countries, on the one side, and private, semi-private or public entities from developing countries, on the other. Numerous examples of joint ventures, and capital flow thereby, exist in the marine sector of developing countries, especially in hydrocarbons, fisheries, transportation and tourism. Taking into account the absolute necessity of attracting foreign investment and the need for creating favourable conditions for foreign investment, resource regimes in developing countries often include provisions for that purpose. The Offshore Hydrocarbon Act of China is an example of such adaptation.

98. Financial assistance from the Governments of developed countries to developing countries in the marine sector often constitutes part of the overall official development assistance. Although there are no quantitative estimates of such assistance, there is evidence that the extent of such assistance is quite significant. Such public sector assistance can take the form of investment, regular loans, concessionary loans or, in many cases, grants. Such assistance is provided bilaterally, multilaterally within the framework of the assistance from a group of donor countries, or within the framework of international donor agencies. As an illustration, in its response, Japan notes that it is cooperating with competent international organizations in order to contribute to the development and management of ocean resources; Japan adds that apart from multilateral assistance, it offers bilateral assistance based on requests from developing States.

(c) International assistance

99. As is well known, within the United Nations system of organizations, the most prominent organizations in terms of financial and technical assistance are the World Bank Group and UNDP. The responses from both of these organizations indicate that the extent of financial and technical assistance provided by them to the marine sectors of developing countries is considerable. The regional development banks also support such activities directly or under comprehensive development programmes.

100. The areas of activities related to ocean affairs to which financial assistance is provided from the World Bank Group include fisheries, port and shipping, offshore oil exploration and development, telecommunications and other sectors. As noted by the World Bank Group, the major objective of the lending by the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA) (both commonly referred to as the Bank) for fisheries is to increase production for export and to generate foreign exchange. Loans are made for the development of large- and small-scale fisheries, aquaculture and boat building including large vessels. In the fisheries sector, the Bank also provides technical assistance and funds for project preparation, working capital, repairs, maintenance, processing and marketing.

101. In the port and shipping sector, the Bank's loans for the construction of port facilities and modification of existing infrastructure are designed to improve the handling of traffic volume and transportation of the catch produced by commercial and, to some extent, by small-scale operations, as well as to finance recent changes in ship technology, such as containerized loading. Financing for the acquisition, management and maintenance of cargo handling, such as crane and fork lifts, and harbour service crafts, such as tugs and lighters, is also included in the loans. Funds from the Bank are also made available for the training of port personnel, for technical assistance to make the port system more effective and, in particular, to contribute to more efficient resource use and improved utilization of port capacity. Bank loans are also made to improve the efficiency of dredging operations and the strengthening of port investment planning and finance management. In the field of telecommunications, loans from the Bank are designed to help the expansion and modernization of international telephone and telex networks and data services.

102. While financial assistance from the Bank takes the form of loans, usually of a highly concessionary nature, assistance from the International Finance Corporation (IFC) usually takes the form of investment. As reported by the World Bank Group, in the fisheries sector, IFC investments have covered the purchase of deep-sea fisheries trawlers, rehabilitation of fish-processing plants, modernization of shore facilities and the development of integrated marine shrimp farms. Technical assistance is provided by IFC for fishery projects to ensure that they are financially, managerially and technologically sound. In the port and shipping sectors, the projects for which IFC funds have been used include construction of ports and storage facilities to handle exports for processors, acquisition of a ship, in one instance, for a year-round ferry service between two countries, reconstruction of a shipyard and modernization and expansion of a shipping company's fleet. In offshore oil exploration and development, IFC has financed several projects, which include seismic and geological studies. In the telecommunications sector, IFC has recently approved a loan for a country to participate in a fiber optic communications cable system; this was to help meet rapidly expanding transoceanic telecommunications needs. With respect to other sectors, funds from IFC have been provided for the construction of a plant that will extract agar-agar, a food additive from seaweed. IFC also conducted a coastal resource survey of a seaweed variety to determine the best sites for economic harvesting providing natural replenishment. In addition, IFC provided technical assistance in selecting process and equipment sources, and in establishing the need for an industrial scale demonstration of the selected extraction technology.

103. The Multilateral Investment Guarantee Agency (MIGA), an affiliate of the World Bank Group, acts as an insurance agency, so to speak, insuring investments made by foreign investors in developing countries against losses from political risks. As noted by the World Bank Group, one of MIGA's first four guarantees involved the establishment of new scallop-breeding facilities in coastal countries.

104. UNDP funding is usually for technical assistance projects and the Programme notes that they have funded a number of projects with respect to the development and management of ocean resources in developing countries. A review of the projects funded by UNDP shows that most projects are concentrated on fisheries and on marine research directed to coastal areas and maritime zones within national jurisdiction. UNDP mentions that it will continue to support such technical assistance projects and particularly those which deal with fishing methods and practices, as well as those aimed at preserving the marine environment.

105. At the international level, one approach that has been pursued by developing countries is to establish regional organizations with regional programmes or to formulate regional programmes under international organizations. This approach allows pooling of financial resources from the developing countries in the region and also from the developed countries in the region or outside. Such regional programmes, by pooling regional resources to respond to regional needs, have been cost-effective, and the requirements of funds for the implementation of such programmes are, by virtue of economies of scale and the internalization of what would have been external benefits viewed from a single country's perspective, considerably less than what would be needed to implement the individual programmes at the individual country level.

106. A variant of this regional measure is to impart a catalytic role to the regional organizations in mobilizing finances. Such a role has been devised in recognition of the fact that an international organization addressing regional needs with combined resources has a better opportunity to attract finances from outside, in comparison with individual Governments from developing countries attempting to mobilize resources from outside. Examples of such approach are the catalytic roles played by IOMAC and SOPAC.

107. In recognition of the fact that international organizations, with their long standing in dealing with donor countries, on the one hand, and with the problems of developing countries, on the other, and thus having the relevant expertise and experience, are in a better position to mobilize resources from donor countries, one approach has been to utilize the services of international organizations on behalf of developing countries to mobilize resources from donor countries. There are various examples of such go-between, liaison or coordinating roles played by international organizations in the mobilization of resources for the marine sector of a recipient developing country.

108. For example, FAO describes the mechanism for external financial assistance to the fisheries sectors of developing countries by promoting greater coordination between various donors, funding institutions and technical assistance agencies. A major recent initiative in this respect has been the design and implementation by FAO, at the request of the donor countries and financial institutions, of the Fisheries Project Information System (FIPIS), which collates, analyses and makes available to those concerned with external assistance to the fisheries sectors in developing

countries information on the number, size and nature of the projects being initiated to this end. Analysis of the data contained in FIPIS indicates that the level of such assistance has averaged about $500 million per year in recent years. However, FAO reports that the support provided in the late 1980s was much below the average.

(d) Further measures

109. It is well known that in spite of the above measures developing countries are still hampered, to a significant extent, by the lack of financial resources; developing countries have almost entirely depended on external assistance, which has also been extremely insufficient. Even when the regional approach is undertaken, in spite of the fact that that approach is cost-effective with regard to funding requirements, UNEP states that some regional seas programmes, particularly those composed entirely of developing countries, have not been able to raise sufficient funds to implement their action plans effectively. It is clear that such regions cannot support comprehensive marine and coastal assessment and management programmes, and UNEP's suggestion is to mobilize continuing outside help.

110. The suggestions as to how the gap could be filled between the financial needs in the marine sector and the extent of finances that have been available are many; however, the predominant suggestion from developing countries is to increase external assistance, either from donor countries or from international donor agencies or both.

111. There are a number of suggestions as to the specific methods and mechanisms of attracting external assistance. For example, Pakistan mentions that on many occasions, although some donor countries showed interest in offering financial assistance to the developing countries, these offers have not materialized for various reasons, one of the most important being the dearth of maritime experts in the developing countries who could draw up the required projects in the desired forms and in a timely fashion. In this connection, the suggestion of Pakistan is that the donor countries or the international organizations or both should render technical assistance to the developing countries, through the provision of services of experts, to prepare maritime projects that could be good candidates for external assistance.

112. In this context, in recognition of the fact that the possibility of mobilizing external resources, public or private, is higher for projects that are within the framework of a well-formulated policy rather than projects developed on an ad hoc piecemeal basis, one significant approach (suggested by IOMAC) is to focus on preparing policies and plans. An articulated national ocean policy can facilitate mobilization of financial resources in additional ways: by providing a framework for resource development, it conveys a general idea to the investors about the resource regime within which they would be operating; and by providing guidance as to how the interrelationships in the marine sector could be dealt with, it facilitates the internalization of the positive external effects and the minimization of the negative ones.

113. Another suggestion (by ECA and IOMAC) is to strengthen the catalytic role of regional marine organizations or programmes or international organizations in mobilizing financial assistance. In this context, provision of technical assistance in project formulation, provision of services of an intermediary between potential donors and recipients, and in some cases, provision of "seed" capital or core financing can be effective measures.

114. In view of the fact that the overall needs for external assistance for the whole marine sector could be too large to be met in any realistic manner, one pragmatic approach (suggested by Mexico) is to identify specific projects of an urgent nature having the highest priority and to concentrate on mobilizing external assistance for such projects.

115. Another suggestion (by Pakistan) is to focus on maritime projects that have the potential of being cost-effective through economies of scale in meeting needs in a combined fashion, such as projects that, besides serving national needs, also serve the needs at the subregional, regional and international levels; this cost-effective aspect can be a favourable factor in attracting economic assistance from donor countries. Bilateral economic assistance, when earmarked in such projects, can ensure implementation of these projects compared to the situation when bilateral assistance to the marine sector is subsumed under the overall assistance covering development programmes in all fields.

116. Another set of suggestions relate to the pre-feasibility, feasibility or pre-investment activities. It is recognized that the requirements of financial resources for investment in the marine sector may be quite large, and may have to come from private entrepreneurs; however, in order to attract investment from the private sector, some or most of the pre-investment activities, the funding requirements of which are considerably less, can be carried out by the public sector in collaboration with donor countries or international organizations. In this context, a set of suggestions is to strengthen and expand the financial contribution of donor countries or international organizations in these activities. For example, in its response, Tunisia describes how financial assistance in a pilot project on the establishment of artificial reefs and another on an improved fish marketing and distribution network can be helpful in determining the feasibility of these enterprises and thereby facilitate the mobilization of resources for the eventual development of these enterprises.

117. In relation to attracting investment funds, a number of States and international organizations suggest strengthening the measures for encouraging joint ventures. For example, ECA suggests that joint ventures between private or public enterprises, both between developing and developed countries as well as among developing countries, in exploring, developing and exploiting living and non-living resources of the sea in the coastal areas as well as in the exclusive economic zones should be encouraged for the purpose of, inter alia, increasing the flow of capital.

D. Environmental considerations

118. Among the most significant guidelines provided by the Convention for the development and management of ocean resources by States is that related to the interrelationships between marine development and marine environment. According to article 193 of the Convention:

> "States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment."

These general guidelines are given more specific content and, equally importantly, guidance is provided as to the requisite measures commensurate with these guidelines, in particular, cooperation among States, in the 46 articles in Part XII of the Convention on the protection and preservation of the marine environment, and a number of other articles. The reported measures by States at the global, regional and national levels encompass a variety of activities along the lines suggested by the Convention, addressing the needs arising out of the interrelationships between ocean resource development and management and the marine environment.

1. Integrated management

119. In response to the need for an integrated approach to ocean resource development and marine environment, many States are taking management measures, in the form of formulating integrated national plans and programmes for marine development and environment (Philippines, for example); implementing programmes to enhance understanding of the relationship between marine ecosystems and marine environment (for example, in the United States relevant agencies, in cooperation with the marine scientific community, have been active in exploring the usefulness of the large marine ecosystems concept to understanding and management of large ocean spaces); and development of regional action plans to control and minimize the input of pollutants into the exclusive economic zones of the States in the region (Denmark and Sweden, for example, report that in cooperation with the other Nordic countries they have agreed on such a regional action plan, based on existing global and regional instruments). Denmark and Sweden, in their responses, also state that as regards the development and management of ocean resources in the coming decade, their Governments are placing the highest priority on the question of protecting the marine environment. For both countries, the ultimate goal in the protection of the marine environment would be to ensure that no activity that causes or is likely to cause pollution would be carried out without a permit that explicitly states that the level of pollution arising from the activity would be at acceptable levels.

120. At the international level, the need for an integrated approach to marine development and marine environment has led to the formulation and implementation of significant measures. It is also recognized that the problems of the oceans, coastal areas and their resources are of global

significance and that to address them requires an international perspective, because uncoordinated local or unilateral national action can only lead to less than optimal solutions.

121. In this regard, a number of organizations within the United Nations system are taking complementary measures and extensive cooperation among them is taking place in accordance with the provisions of the Convention. It has been noted that effective regional mechanisms are an important part of marine environmental management both in dealing with regional problems and in reinforcing capacities at the national level. A number of such mechanisms have been developed and include the UNEP Regional Seas Programmes, the IOC regional subsidiary bodies and the FAO regional fisheries commissions.

122. For example, the Regional Seas Programme coordinated by UNEP and implemented in cooperation with many other agencies and organizations has been cited for its effectiveness in capacity-building for marine environmental management in developing coastal States. At present, it includes 10 regions with over 120 coastal States and Territories participating in it. 18/ Each regional action plan is formulated according to the needs of the region as perceived by the Governments concerned and is designed to link assessment of the quality of the marine environment and the causes of its deterioration with activities for the management and development of the marine and coastal environment.

123. The structure of all action plans is similar and usually includes the following components: (a) environmental assessment; (b) environmental management; (c) environmental legislation; (d) institutional arrangements; and (e) financial arrangements, wherein UNEP together with the concerned United Nations agencies and other organizations provide catalytic financing in the early stages of regional programmes. The identification of appropriate national institutions to participate in the regional activities and their strengthening as part of ongoing regional programmes result in each country having centres of environmental expertise of continuing value.

124. Participation in and providing assistance to developing countries through the international programmes are important national efforts of many developed countries. For example, Sweden reports that through its research and development activities, as well as its assistance to multilateral projects, it contributes to the enhancement of knowledge about marine resources and marine environmental questions.

2. Environmental policies

125. In recognition of the fact that an overall environment policy can facilitate addressing the need for an integrated approach to marine development and marine environment, some States have adopted such policies. For example, China reported that the protection of the marine environment constitutes a major national policy and that it has emphasized prevention and combined it with control measures. Environmental protection legislation was

enacted in 1982 and has subsequently been supported by administrative regulations. Numerous activities relating to monitoring, surveillance, inspection, scientific research and control of marine environmental pollution have been implemented.

3. Environmental impact assessment

126. Environmental impact assessment can be a measure promoting the integration of resource development and environmental considerations, and many States have reported taking such measures (Germany, Thailand, for example). With regard to environmental impact assessment, experience has revealed that the sophisticated, time-consuming and expensive procedures used in developed economies with data and expertise needed for such procedures are not suitable for most developing States. A simplified approach, based on the premise that, for most frequently needed cases, environmental impact assessments can be prepared by locally available experts, without a long research period and with relatively modest financial resources, has been formulated and tested in Cyprus. 19/

4. Prevention of marine pollution

127. In response to the needs for the prevention, reduction and control of marine pollution, a wide range of measures are being undertaken by States and international organizations. States have reported taking measures such as enacting more effective legislation (United States, for example); combating land-based pollution through sewage treatment (Morocco); establishment of centres for marine environmental studies (Norway); and combating vessel-source pollution through contingency plans in the event of an accident (Morocco).

128. At the bilateral level, there are a number of agreements for combating marine pollution. The recent agreement between the United States of America and the Union of Soviet Socialist Republics on combating pollution in the Bering and Chukchi Seas can be mentioned as an example.

129. In keeping with the fact that marine pollution has no physical boundaries, that the effective protection of the oceans can only be achieved through a high level of intergovernmental cooperation and in accordance with the provisions of articles 197, Cooperation on a global or regional basis, and 200, Studies, research programmes and exchange of information and data, of the Convention, a number of States have provided information on measures they have taken in this regard, the most widely mentioned being participation in and adherence to international conventions, global or regional, and active involvement in global and regional programmes.

130. At the international level, with the objective of encouraging and facilitating the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships, a number of measures have been

taken. Since the implementation of the measures of the 1973 International Convention for the Prevention of Pollution from Ships and its Protocol of 1978 (concerned with the prevention of pollution) and other international instruments that are intended to improve maritime safety and have provided a means of reducing accidental pollution, the volume of oil entering the sea as a result of maritime transport has been drastically reduced.

131. During the past few years, IMO has provided technical assistance to a number of countries and regions in the formulation and introduction of policies for the prevention and control of marine pollution. These include Brazil, China and Saudi Arabia, and regions such as West and Central Africa, the States of the Gulf of Aden, and the Malacca/Singapore Straits (Indonesia, Malaysia and Singapore). IMO also provides support for the regional oil combating centre for the Mediterranean.

132. As regards oil pollution combating, IMO reports that currently there are 13 regional multilateral agreements on cooperation in combating marine pollution emergencies either in force or under development. Nine of these involve some developing coastal States in Africa, Middle East, Asia, Caribbean and Latin America. These agreements contain elements such as pollution reporting requirements, mutual assistance and cooperation, establishment of a national system of preparedness and response, and exchange of information and institutional arrangements to facilitate marine pollution combating. With the adoption of the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990, IMO envisages a greater role to facilitate the transfer of technology and to provide technical assistance and advice. Emphasis will be placed on the establishment of further subregional pollution combating stockpiles and associated manpower training in areas where developing coastal countries are at high risk from major oil pollution incidents because of high-density vessel traffic, offshore oil exploration, development or production activities and environmentally sensitive conditions.

133. Approaches for protecting the marine environment from pollution have been suggested, including effective regional mechanisms. Other approaches suggested include the adoption of development plans wherein the oceans and coastal areas of States are considered finite economic assets whose sustainable use can only be achieved through prudent and rational exploitation, and the provision of financial resources additional to those currently available to developing coastal States, to enable them to become equal partners in dealing with global economic and environmental issues.

E. Ocean resources and uses: sectoral issues

1. Living resources

134. One of the marine sectors that witnessed the most important influence of the new regime for the ocean established by the Convention is the living resources sector. The significant developments incorporated in the regime with regard to jurisdictional extensions and management and conservation obligations gave rise to the predominant needs of States for effective fishery management, in the national context and, equally importantly, because of the very nature of marine fisheries, in an international cooperative framework, mainly at the regional level (see A/45/712, paras. 86-105, in particular). In response to these needs, a wide variety and a large number of measures are being undertaken by States, nationally, regionally and globally.

(a) Fisheries development and management

135. The mandate of FAO and its long-standing experience in the marine living resources sector places the organization in the most important position to undertake relevant measures for the realization of benefits by States under the new ocean regime. The 1984 FAO World Fisheries Conference adopted a Strategy for Fisheries Management and Development that has provided for significant measures to improve fisheries management and development. The Conference also adopted five associated programmes of action designed primarily to assist developing countries in their fisheries development and management efforts. FAO is undertaking a number of important measures within the framework of these action programmes, that is, on planning, management and development of fisheries, development of small-scale fisheries, aquaculture development, international trade in fish and fishery products, and promotion of the role of fisheries in alleviating undernutrition. FAO provides on a continuing basis advisory services on fisheries management to countries that request such assistance; these include intensive programmes for resource evaluation and management both using acoustic methods and developing new methodologies for stock assessment modelling and for bioeconomic analysis. These programmes are complemented by species identification and data programmes as well as the collection and dissemination of world-wide published information on fisheries.

136. A number of countries have either introduced or are considering the introduction of management measures or new management structures and institutions, or new policies of an integrated kind. New fisheries development plans and management regulations have been adopted by Sri Lanka, Madagascar and Turkey. Jamaica has formulated a fishery management plan that envisages the establishment of a fisheries management council. In some cases, management needs have led to the elaboration and implementation of revised plans and restructured institutions. Uganda, for example, has established a national committee on fisheries exploitation; the fishery administrations in Burundi and Colombia have undergone significant institutional reorganization, including the creation of new units charged with responsibility for fisheries,

and the elaboration of new plans for the fisheries sectors in these countries. Spain has undertaken a comprehensive review of its fisheries policies and the United Republic of Tanzania established a legal framework for fisheries and conducted a policy and programme review leading to a national seminar on fisheries development and a subsequent donors' conference.

137. The involvement of the private sector in the implementation of fishery management policies has been emphasized by a number of countries. For example, Cameroon, New Zealand and Sri Lanka have noted the encouragement being given to the private sector in the implementation of their fishery policies and the realization of the desired structural changes in the fisheries sector.

138. In response to the management and conservation needs, in addition to the adoption of management policies, plans, programmes and institutions, various specific measures have also been noted by States. China, for example, has described the acts and their implementation through detailed regulations and rules, establishing protected and suspended fishing zones as well as zones where fishing is banned during specified periods and zones where mechanized trawling is banned. New Zealand has reported significant conservation benefits through the implementation of a revised management system based on individual transferable quotas incorporating resource rents. The United States has noted that its fishery management plans are consistently amended to incorporate revisions in quotas, size limits and gear restrictions; it has also noted that advisory guidelines for its national standards for fishing conservation and management are revised from time to time to respond to changing conservation needs.

139. At the international level, bilateral or multilateral agreements and cooperative arrangements constitute an effective set of measures with regard to management, exploitation and conservation of fishery resources, especially in the case of straddling stocks and highly migratory, anadromous and catadromous species. Numerous examples of such bilateral or multilateral agreements or arrangements exist. For example, under the bilateral fishery agreements between China and Japan, protected fishing zones and suspended fishing zones have been established, and the number of fishing vessels of either party that may enter the agreed zones at various times has been fixed. Poland has described its collaboration with Spain and the United Kingdom of Great Britain and Northern Ireland in exploratory fishing and stock assessment.

140. The appropriateness of the regional approach to fisheries management matters is exemplified by the over 30 marine and inland fishery bodies that have been established both within and outside the framework of FAO. Two of these bodies were specifically addressed in the responses, namely, the Forum Fishery Agency (FFA) and the Northwest Atlantic Fisheries Organization (NAFO). FFA notes that it was set up in direct response to the expressed needs of the South Pacific States to foster the rational management and development of their fisheries resources and that its work programme outlines what measures the States want taken to meet their needs.

141. As regards NAFO, Canada notes that, notwithstanding the objectives of the organization to promote the optimum utilization, rational management and conservation of fish stocks in the north-west Atlantic, in recent years, NAFO has been unable to cope effectively with several serious challenges to conservation and management of the fishery in its regulatory area. One such challenge has been posed by the inadequate regard for the scientifically based quotas set by NAFO in favour of multilaterally set and much higher quotas, thereby contributing to depletion of stocks and reduction of the relative shares of other NAFO members. Canada also notes two forms of unregulated fishing: nationals of some NAFO States increasingly resort to registration of vessels in non-member countries, thus escaping quotas and creating a new dimension to the problem of flags of convenience; and the increasing activity of vessels of non-member States without a history of fishing in the area.

(b) Small-scale fisheries

142. In recognition of the important role often played by small-scale fisheries in providing food for domestic consumption and employment in frequently disadvantaged areas and of the need to improve the welfare of marine and inland fishing communities, a number of countries are implementing a variety of measures in the form of special programmes designed to improve the incomes and living standards of artisanal fishermen. FAO provided numerous examples of such measures.

143. For example, China has achieved remarkable transformation and reforms in its small-scale fisheries sector; public ownership has been maintained but, by means of a policy of decentralized management and centralized services, operational responsibilities have been transferred to cooperatives and fishing communities that are fully involved in the elaboration of development programmes. Sri Lanka has noted the impressive progress already made through the establishment or strengthening of "fisherfolks' organizations". Others including Iraq, Mauritius and Turkey have noted the encouragement being given to cooperatives as mechanisms through which to foster small-scale fisheries development. The Gambia has successfully introduced community fishing centres, financed with bilateral aid; supported with revolving loan funds and free, fast and effective extension services, fishermen are reported to be earning significantly increased incomes. Senegal has achieved valuable progress in the artisanal sector through motorization schemes, the introduction of new technologies and the provision of tax free or subsidized inputs.

144. Other examples noted by FAO of support being provided in a variety of forms for small-scale fisheries development include: construction of coastal fishing centres (Cameroon); financial support for vessel construction and conversion (Spain); credit infrastructures and training (Chile); grants and other incentives (Bahrain and Barbados); creation of artisanal fisheries extension services and protected areas reserved for small-scale fisheries (Colombia and Malaysia). The success of the measures of providing basic services such as roads, harbours, health amenities and other infrastructures has been reported by a number of countries, including Pakistan and Sri Lanka.

The Soviet Union has noted the introduction of new legislation regarding property rights and cooperatives that should benefit small-scale fishing enterprises.

145. Despite the successful implementation of a variety of measures mentioned above, many problems still exist. As reported by FAO, in many parts of the world Governments continue to face serious problems as they seek to improve the incomes and welfare of small-scale fishermen. Nigeria, for example, has noted that, as a consequence of economic and financial difficulties, the subsidies applied to inputs used in artisanal fisheries had to be removed, and costs of engines, nets, repair services and so on have been rising. The artisanal fisheries in Nigeria have thus declined in recent years, and in an attempt to alleviate the situation the strategy pursued by Nigeria is to create a people's bank providing small, simply administered loans. The United Republic of Tanzania has pointed to the constraints upon small-scale fisheries arising from low levels of efficiency, lack of foreign exchange for gears and equipment, insufficient credit facilities, poor distribution channels and inadequate controls over fishing activities. The negative impacts of foreign exchange difficulties, lack of access to simple credit, high costs of inputs, inefficient fishing methods and continued conflicts of interests between artisanal fisheries and industrial operations have been identified as areas where problems still persist, by many countries, including Burundi, Ghana, Kenya, Jamaica, Nicaragua and El Salvador.

(c) Access

146. With regard to fishery (access) agreements between coastal States that have sovereignty over the fishery resources in their exclusive economic zones and foreign fishing fleets, improved terms and conditions in favour of coastal States in some recent agreements has been noted by FFA. Such terms and conditions pertain to, inter alia, port calls, transshipment provisions, transponders and technology transfer requirements.

147. As for identifying areas of possible improvement in the terms and conditions of other access agreements, one suggestion by FFA is to review existing agreements and to apply the experience of recent agreements the terms and conditions of which have improved in favour of coastal States. A strategy is suggested of pursuing a strong common position among the coastal States in the region on minimum terms and conditions under the agreements.

(d) Enforcement

148. The measures undertaken by FAO at present are composed of technical assistance for making management regimes more effective, including the strengthening of monitoring, control and surveillance provisions. Malaysia, for example, has established a central command for fisheries monitoring, control and surveillance to coordinate the work of various agencies related to fisheries.

149. As noted by many countries, including Barbados, Cameroon, Ghana and El Salvador, considerable difficulties are still being encountered in establishing effective systems for the monitoring, control and surveillance of fishing operations by both domestic and foreign fleets, that is, of ensuring compliance with legislation and management measures once introduced. Nicaragua has also noted that, notwithstanding a management system involving on-board and on-land inspection, serious problems remained in controlling furtive and contraband activities. In addressing these continuing problems, the suggestions by these countries are for the intensification of advice and assistance by international organizations and by experienced countries in formulating and implementing effective enforcement measures, including monitoring and control systems.

(e) Trade

150. With respect to the needs in relation to the increasingly important role of exports of fish and fishery products by developing countries, a number of successful measures have contributed to a remarkable expansion of export trade by developing countries, and FAO reports that the value of such trade by developing countries more than doubled over the second half of the 1980s and now accounts for about 47 per cent of the world trade. The measures include maintenance of quality standards, reduction in trade barriers, diversification in product forms and access to market information.

(f) Financing

151. In addressing the needs for finances in the living resources sector, a policy being pursued in many developing countries is that of encouraging private sector investment in fish production and marketing, which constitutes a noteworthy set of measures. Such a policy also pertains, concomitantly, to restricting government involvement in the fisheries sector to the provision of supporting infrastructures and basic services of a non-commercial nature. Senegal is currently pursuing such a policy of promoting vigorously private sector participation in fisheries seeking the disengagement of the State and a vigorous discipline in public finance. Egypt, the Gambia, Kenya, Mauritius, Malaysia, New Zealand, Nigeria, Pakistan and Turkey are also implementing policies encouraging commercial and private sector investment in fisheries whilst reserving to the Government, optimally aided by external international financial assistance, the role of providing an infrastructure and economic environment that would stimulate private investment, backed by publicly funded research, training, extension and administration structure.

2. Non-living resources

152. States and international organizations have provided information on a range of measures and approaches to address many of the needs of States, as identified in the first report of the Secretary-General (A/45/712), in relation to the development and management of non-living resources in areas within and beyond the limits of national jurisdiction.

(a) Non-fuel minerals

153. The responses in respect of measures and suggested approaches address predominantly the facts that, at the present stage of mineral resource assessment in the exclusive economic zone of most developing countries, little is known about the volume in place and the mineral content of most marine mineral deposits, that little actual experience and few pilot operations are available to evaluate marine mining costs and operational uncertainties, and that the technology for exploring the vast areas of the exclusive economic zone is generally expensive and beyond the reach of many developing coastal States. Thus, the measures and suggested approaches range from the use of low-cost methods for conducting preliminary resource assessments to geophysical and sample surveys and the conduct of surveys similar to the Indian Ocean Expedition on behalf of developing coastal States.

154. In addition to the measures discussed in chapter III, section B, to obtain critical information and data such as bathymetry, morphology and topography of exclusive economic zones that may be used, inter alia, in the assessment of marine minerals, other measures that are specifically geared to the discovery and to the possible subsequent development of such resources are being taken. One such measure is seafloor mapping whereby, as a result of surveys, maps of the coastal and nearshore marine areas, as well as the exclusive economic zone, containing geological, bathymetric and morphological data are produced. An example of this kind of effort is SOPAC's mapping programme, which covers the coastal, nearshore and exclusive economic zones of its member States. A GLORIA survey and swath-mapping programmes have resulted in reconnaissance scale maps of selected areas, evaluation of areas with mineral potential and establishment of databases on offshore minerals. Areas with mineral potential have been promoted within the marine mining industry so that the detailed exploration required (geophysical and drill sampling surveys) to locate and support the development of deposits can be undertaken.

155. SOPAC's multifaceted programme is such that, inter alia, it supports its mapping programme by coordinating the activities of foreign research vessels, ensuring that member countries are informed of the activities, the data collected and the results of cruises in their waters, and it utilizes the results of cruises, as appropriate, to update its various databases. Japanese, French, German and Soviet vessels have been involved in surveys to investigate cobalt-rich crusts, polymetallic nodules and polymetallic sulphide deposits in the exclusive economic zones of member States of SOPAC.

156. Other measures that rely on direct sampling include the work of the United Nations Revolving Fund for Natural Resources Exploration that has funded exploration programmes for offshore minerals at the request of developing States with marine mineral occurrences. For example, such a programme, consisting of geophysical and drill sampling surveys, was conducted offshore from Point Noire, the Congo, and its results indicated that the tonnage and grade of a phosphorite/shell deposit found there would support a low-cost dredge mining operation. 20/

157. Measures are also being taken to provide low-cost methods of conducting preliminary marine minerals resource assessments. Such methods, which rely on the available literature on land-based and nearshore geology together with the study of supply conduits for the deposition of mineralized ores to the seafloor, have been developed and training in the application of these methods is provided by Canada through ICOD. In a series of two-week regional training courses, geologists and senior decision makers in the South Pacific and West and Central Africa have been trained in these methods. In the case of the South Pacific, following the training programme, ICOD provided financial assistance so that a nearshore mineral geologist could work with SOPAC. The results of this work contributed to a great extent to the location of offshore areas with mineral potential in the South Pacific mentioned above. In West and Central Africa, the results of the training programme so far are that in Guinea a drilling programme to study heavy minerals in Paleovalleys on the Guinean continental shelf and coastal estuaries has been carried out and preliminary data collected; in Senegal, a research agreement has been signed with Dupont for the study of titaniferous beach sands; and in the Comoros, a drilling and well construction project on the Island of Grande Comoros is being undertaken.

158. Another marine mineral for which measures were reported on was salt. UNIDO reported on measures it had taken regarding the development of coastal salt works. These measures include the location of suitable sites in developing coastal States, the provision of equipment for laboratories and the training of personnel. Such measures have been implemented in the United Republic of Tanzania, Mozambique, Zambia, Kiribati and Jordan, among others.

(b) Offshore oil and gas

159. Hydrocarbons and natural gas exploration and exploitation in offshore areas have in practice been treated as an extension of the land-based energy sector. Although they represent the most valuable minerals exploited in marine areas, very little information was provided in the responses to the notes verbales. In relation to the expressed need for financial and technical assistance to support attempts at assessing the petroleum potential of offshore areas of developing coastal States, IFC reported that it had financed several offshore oil exploration and development projects, which included seismic and geological studies.

160. Concerning measures for creating favourable conditions for attracting foreign investment to this sector, China reported that it had enacted an Offshore Hydrocarbon Act through which it had concluded 56 agreements with 45 oil companies from 12 countries.

3. Maritime transport and ports

161. A wide range of needs of States arises in relation to realization of benefits under the United Nations Convention on the Law of the Sea in the maritime transport and ports sector (see A/45/712, paras. 113-123, in

particular). In response to these needs, States and international organizations have been undertaking a number of measures.

162. With regard to safety of navigation and of life and property at sea, one measure taken by many countries has been the establishment and strengthening of an institution, mainly in the form of a coast guard, with responsibilities in these areas (reported by Argentina and Pakistan, for example). Morocco notes the establishment of a centre for maritime safety and security and nautical inspection, and acquisition of equipment for safety and security at sea.

163. South-South cooperation in the field of safe, efficient and economical conduct of marine transportation has involved important measures. For example, Argentina notes the provision of technical assistance to countries in Latin America through cooperation programmes sponsored by IMO. Argentina also noted that, together with Brazil, Paraguay and Uruguay, it had under a recent treaty established a common market with an organizational structure that includes a special subgroup on maritime transport. The development of a regional shipping agency in the Caribbean has been noted (by Barbados).

164. In regulating maritime transport within coastal areas under national jurisdiction, the implications of updating and formulating national legislation consistent with the Convention and with international practice have proved to be onerous. To facilitate such efforts, international organizations and in particular regional commissions with the assistance of experts, including those from the United Nations, IMO and UNCTAD, and supported by funding agencies, have responded, inter alia, by the formulation of draft guidelines for maritime legislation. 21/

165. International shipping has also seen more intergovernmental cooperation and discussion mainly as a result of the growing concern over the operation of substandard ships and the difficulty some flag States have experienced in regulating their ships. The Memorandum of Understanding on Port State Control signed by the maritime authorities of 14 European countries has been an effective deterrent to substandard ships in the ports of the region. The effectiveness of such measures has been noted in other parts of the world and it is possible that the systematic inspection of ships by port States could well be established elsewhere. IMO is in fact promoting the adoption of regional/subregional systems of port State control.

166. IMO has emphasized that there are sound commercial reasons for adopting maritime safety measures because they make it possible to reduce costs to the shipping industry by avoiding the payment of high insurance premiums charged on the basis of previous maritime casualties.

167. Significant measures have been undertaken by IMO to ensure safety of navigation and the prevention of pollution, which include the development of international rules, standards and procedures involving such matters as construction of merchant ships; equipment; crew standards; navigational procedures and communications.

168. In addition to shipboard requirements there are a number of equally important external systems required for safe navigation: internationally recognized aids to navigation are developed by the International Association of Lighthouse Authorities; IMO regularly promulgates directives on ships' routeing, traffic separation schemes, deep-water routes and areas to be avoided; meteorological services are provided by WMO. A world-wide system of promulgating navigational warnings operates under the aegis of IHO and IMO. Standards for both shipboard and shore-based radio equipment for safety communications and their coordinated use in distress alerting, search tasks and safety communications in general have been set by the global maritime distress communications system developed by IMO in conjunction with the International Telecommunication Union (ITU).

169. High priority has also been given by IMO to the development of global standards for the maritime training of seafarers. ILO also assists in the establishment of higher standards of social protection and welfare and improved working conditions for seafarers through the adoption of conventions.

170. Measures taken by UNCTAD in the area of maritime transport have been extensive. 22/ A significant measure has been the adoption of the 1986 United Nations Convention on Conditions for Registration of Ships, the provisions of which are complementary to the Convention on the Law of the Sea, in particular with respect to nationality and status of ships and duties of flag States. The question of conditions for the registration of ships has been under extensive examination in many countries during recent years. Traditional maritime countries have been concerned about "flagging out" by national shipowners and the consequences for international shipping and seafarers of the development of "open registry" fleets. These concerns also relate to possible consequences as regards safety of navigation and pollution of the marine environment.

171. While the formulation of international rules and standards itself goes a long way in facilitating international maritime transport, it has been recognized that not every country possesses enough resources to have them implemented or enforced. The maritime administration of developing countries, in particular, find it extremely difficult to implement provisions that call for specialized skills and new equipment in ships and harbours.

172. IMO has taken a variety of measures to address these needs: (a) it promotes international assistance by including specific provisions in the conventions themselves to this effect; for example, the 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation is primarily a technical assistance convention, the first of its kind. It contains provisions calling for support for those Parties which request technical assistance, including training of personnel and ensuring the availability of relevant technology and facilities; (b) it channels international assistance to developing countries through its technical cooperation programme; and (c) it provides financial resources to acquire the equipment to set up and operate modern coast guard services capable of detecting and preventing violations to the rules and regulations enforced.

173. Recognizing that the training of human resources is the cornerstone of maritime progress, maritime training measures have been assigned the highest priority in IMO's technical cooperation programme. It offers training to senior maritime personnel from developing countries in maritime safety, maritime administration and marine pollution prevention, maritime training, port and shipping administration, technical management of shipping companies, and maritime law and legislation.

174. There are basically three sets of training measures of IMO, and these are exemplary of requisite measures addressing three categories of needs of States in relation to training in maritime matters. The establishment and operation of the World Maritime University (WMU) at Malmö, Sweden, involves one set of measures. This advanced centre for maritime studies not only fills an enormous gap in the advanced education of maritime technical personnel but clearly demonstrates the high degree of cooperation that an international organization is able to promote between the nationals of developed and developing countries in the maritime field. The second set of measures are designed to provide short-term specialized training to the personnel of developing countries, and they involve the establishment of a wide-ranging programme of model courses, with the financial assistance of Norway. In order to put the model courses programme into effect on the world-wide scale, the IMO International Maritime Academy was established at Trieste, Italy, with the support of the Government of Italy. The Academy fulfils a twofold role: to offer model courses on search and rescue, port State control, accident investigation and a new course on hydrographic surveying together with IHO, at a world-wide level, and to provide technical assistance for offering other model courses in various selected maritime training centres in developing countries that have been designated branches of WMU. The establishment and operation of these branches constitute the third set of measures aimed at meeting regional needs through regional institutions, achieving cost effectiveness in the optimum utilization of the regional resources. Branches of this kind have already been established in Algeria, Argentina, Brazil, China, Côte d'Ivoire, Egypt, Ghana, India, Morocco, Mexico and the United Arab Emirates. Argentina, in its communication, mentions that it is prepared to offer IMO model courses and other similar courses to developing country participants from the region.

175. In response to the widespread need for specialized lawyers, IMO has established, in collaboration with the Government of Malta, the IMO International Maritime Law Institute. The Institute offers a comprehensive course in international maritime law; international machinery for developing and updating these regulations; procedures for implementing and enforcing the international standards; and problems posed by these procedures and their solutions.

176. Training also continues to be a major feature of UNCTAD's technical cooperation and training programme. The TRAINMAR programme has as its objective the strengthening of maritime training capabilities of the developing countries and makes an important contribution to the training of maritime managers.

4. Coasts

(a) Recreational uses

177. The coasts and the nearby marine areas provide many important recreational uses that can contribute significantly to the economics of many countries, in particular to that of developing countries, through the tourism industry as a major foreign exchange earner. A number of respondents have mentioned measures promoting and improving the contribution of the recreational uses of the coasts to the socio-economic development of the countries concerned.

178. In some States where tourism is an established industry further measures are being undertaken with a view to expanding the industry. Such measures include effective promotional efforts, including multimedia advertisements; market research and survey for the purpose of raising demand and accommodating consumer preferences; ensuring adequacy and efficiency of ancilliary services, and so on. Reference has been made to training of entrepreneurial, managerial and service personnel related to the tourism industry. In some cases, all these measures are taken in a coordinated and planned fashion under the auspices of a national tourism agency.

179. Regional cooperative measures in the form of the development of multi-island or multi-country tours have been noted, especially in the cases of small island countries, essentially achieving an expansion in the market through economies of scale. Some developing country respondents have referred to joint ventures with developed countries or other developing countries as effective measures for the promotion of recreational uses, especially tourism.

180. In response to the concerns regarding environmental degradation, which in turn affects the demand for recreational uses, some respondents referred to regulatory and other supportive measures such as zoning, coastal construction guidelines, waste disposal facilities and so on. The establishment of marine parks or reserves has been mentioned as a measure to promote recreational value and at the same time to protect or preserve the marine environment, including maintenance of natural populations for educational and scientific purposes.

181. Several suggestions have been made by respondents with respect to necessary measures for fostering recreational uses of the coasts and nearby marine areas. Some developing countries in which the tourism industry is at a nascent stage of development have suggested assistance measures, from bilateral, multilateral or global sources, for the development of the industry. In the case of some respondents with an established tourism industry, while seasonal variations appear to be manageable, the need for dealing with medium- and long-term cyclical variations still persists. Some respondents have suggested technical assistance in establishing marine parks and reserves.

(b) Protection of shorelines

182. Some of the responses included measures for the protection of shoreline for the opportunities they provide for residential, recreational, industrial, agricultural, aesthetic, marine technological and scientific development, and minerals. SOPAC has reported on coastal erosion control projects that it has undertaken in its member countries. These include studies on the effects of sand and gravel extraction in the Solomon Islands, and on the causes and rates of coastal erosion in parts of Kiribati, Tuvalu and Solomon Islands. SOPAC also provides training to member country nationals in coastal erosion surveying techniques.

183. While it would appear that in the South Pacific adequate measures are in place to address the needs occasioned by coastal erosion in member countries of SOPAC, the same situation cannot be said to exist everywhere else. The information provided by Cameroon with regard to measures at both the national and regional levels to mitigate the effects of coastal erosion is indicative of this. Coastal erosion is a significant problem in a number of States in West and Central Africa. In response to requests by States of the region and as part of the Action Plan for the Regional Seas Programme of the region, UNEP has conducted a number of studies on the causes and control of coastal erosion. A product of these studies is a manual on the subject. Cameroon pointed to, inter alia, the shortage of funds, absence of scientific, educational and technical personnel, and the lack of appropriate marine scientific and technological infrastructures as the main factors impeding its national efforts to protect the shoreline. Observing similar problems in other States of the region, Cameroon suggests the establishment of a regional commission that should be entrusted with the mandate to assist Member States in protecting their shoreline.

V. CONCLUDING OBSERVATIONS

184. The information contained in the responses that were received from a wide range of States and international organizations made it possible to present, in the report on the needs of States in regard to the development and management of ocean resources (A/45/712) and the present report, a global overview of the state of affairs with regard to the realization by States of benefits under the Convention. Thus, the General Assembly has before it a broad review of national, regional and international perspectives and objectives, experiences and capabilities. Most importantly, the responses reflect, in a variety of ways, the degree of urgency attached to the adoption of effective measures in implementing the Convention and supplementing national incomes by maximizing benefits under the new ocean regime.

185. While some States have the capacity and capabilities and have commenced the process of marine development, they desire to enhance their efforts. However, those States which have not embarked on such a course owing to lack of capabilities would need to start their marine development process.

186. An initial impediment, in this context, is the general lack of awareness, at the national planning and policy-making levels and at managerial levels, of the potential of the extended marine dimension available to States under the Convention, and its prospective contribution to their socio-economic development. Efforts to inculcate such awareness need to be intensified.

187. Once the significance is perceived, the crucial problem yet faced by most developing countries is that their capabilities and financial and human resources are limited and already committed to existing non-marine development sectors. They are thus unable to benefit from the new opportunities. Most developing countries have at least some rudimentary marine activities; these traditional activities have to be enhanced and made more productive. New activities have to be identified and incorporated in their developmental efforts. The setting of goals for the effective utilization of marine resources, the assessment of the existing capabilities and the identification of the vehicles for enhancing capabilities required to reach the goals within the overall national development perspectives would constitute a rational ocean policy. The appropriate agencies and institutions at the national level would have to be assigned the responsibility to give effect to the policy so devised.

188. For informed national policy development, efforts should be addressed at acquiring the basic oceanographic and marine resource-related data and information. A considerable amount of data is available from various sources, including those collected in the implementation of existing regional and global programmes, which could be accessed and consolidated. Efforts could also be made to obtain assistance from international organizations or bilateral or multilateral sources in collecting the basic data, if there are important gaps. The cooperation between researching States and developing countries with respect to marine scientific research in the exclusive economic zones of the latter, incorporated in the Convention, can also be utilized for this purpose.

189. As to the means for enhancing human resources, developing countries could start with sectors where marine expertise exists, adopt it as a core and broaden it through the incorporation or development of other skills. The specializations to be grafted on should include the fields of oceanography, marine technology, economics, law and sociology to achieve a multidisciplinary and intersectoral perspective. If the relevant expertise is not available from the existing manpower pool, recourse could be had to training programmes and technical assistance.

190. It would be a strain on existing financial resources to fund new or expanded marine development efforts. To ease this limitation, the earmarking and utilization of revenues generated in the existing marine activities, however inadequate, and of revenues prospectively available through licensing marine resource exploitation to advanced countries, for achieving the ocean policy goals, have been suggested. Another source of financial support is international organizations, especially the World Bank and UNDP, in the form

of "core funding". Donor countries, bilaterally or multilaterally and through donor institutions, can also be helpful.

191. The respondents pointed to a number of advantages that can be reaped by taking a regional approach to the marine developmental efforts. Developing countries could have recourse to regional and subregional measures to enhance their capabilities for data- and information-gathering activities, and human resource development, and in securing financial resources.

192. As is evident from the responses of States and international organizations, realization of benefits by States, in particular developing States, under the Convention on the Law of the Sea can best be addressed through rational ocean policies that integrate the new opportunities under the Convention with the existing traditional marine activities, giving an added dimension to national development objectives. Developing countries, in particular, have requested assistance in their endeavours in this context. They reiterated their request to intensify financial, technological, organizational and managerial assistance in their marine developmental efforts and to strengthen cooperation among international organizations and with donor States in the provision of such assistance.

193. The earlier report (A/45/712) and the present report would serve as a catalyst for the General Assembly in assessing the current situation regarding ocean development, setting priorities and determining appropriate methods and mechanisms and what follow-up action it may take for maximizing the opportunities of States in the realization of benefits under the Convention.

Notes

1/ Official Records of the Third United Nations Conference on the Law of the Sea, vol. XVII (United Nations publication, Sales No. E.84.V.3), document A/CONF.62/122.

2/ Respondents marked with asterisks submitted responses to both of the Secretary-General's communications.

3/ The first ministerial-level meeting of the Conference was held at Colombo from 26 to 28 January 1987 and the second ministerial-level meeting at Arusha, United Republic of Tanzania, from 3 to 7 September 1990. The following States were represented in the latter meeting: Australia, Bangladesh, Burundi, China, France, Germany, Federal Republic of, India, Indonesia, Iran (Islamic Republic of), Italy, Kenya, Malawi, Malaysia, Mozambique, Nepal, Pakistan, Poland, Saudi Arabia, Seychelles, Sri Lanka, Somalia, Sudan, Uganda, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Union of Soviet Socialist Republics, Yemen, Zambia and Zimbabwe. The Standing Committee of the Conference met from 14 to 19 July 1991. The participating States were: Australia, Bangladesh, China, Egypt, France, Germany, India, Indonesia, Iran (Islamic Republic of), Iraq, Kenya, Malaysia, Malawi, Mauritius, Myanmar,

Notes (continued)

Nepal, Netherlands, Norway, Pakistan, Romania, Saudi Arabia, Seychelles, Sri Lanka, United Republic of Tanzania, Thailand, United Kingdom of Great Britain and Northern Ireland, United States of America and Union of Soviet Socialist Republics.

4/ The Expert Group Meeting was held at Santiago from 28 November to 1 December 1989. Reports were presented by: Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Netherlands, United Kingdom of Great Britain and Northern Ireland and United States of America.

5/ The first and the second meetings of the Group of Experts were held at Brazzaville from 12 to 15 June 1990 and at Montevideo, 3 to 6 April 1991, respectively, at which reports were presented by: Argentina, Benin, Brazil, Cameroon, Cape Verde, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Namibia, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, Togo, Uruguay and Zaire.

6/ The annual reports on the Law of the Sea are contained in A/43/718, A/44/650 and Corr.1, A/45/721 and A/46/722. The special reports on the marine environment and on the marine scientific research regime are contained in A/44/461 and A/45/563, respectively.

7/ Such reports dealing with the issue of driftnet fishing are contained in A/45/463 and A/46/615 and Corr.1 and Add.1.

8/ See, for example, General Assembly resolutions 40/61, para. 12, 41/34, para. 11, 42/20, para. 12, 43/18, para. 12, 44/26, para. 12, and 45/145, para. 12.

9/ See para. 4 and footnotes 3, 4 and 5 supra.

10/ Canada, for example, provides assistance through the International Centre for Ocean Development, a federal crown corporation with a mandate to initiate, encourage and support cooperation between Canada and developing countries in the field of ocean resource development.

11/ Colombia has obtained such assistance from the Woods Hole Oceanographic Institute, United States of America, for example.

12/ Reported instances of regional cooperation in specific sectors and with respect to particular functions are numerous and will be dealt with in corresponding chapters in the present report.

13/ In this context, the Conference on Economic, Scientific and Technical Cooperation in the Indian Ocean in the context of the New Ocean Regime; the South Pacific Applied Geoscience Commission; and the Permanent Commission for the South Pacific have been mentioned by respondents.

Notes (continued)

14/ For instance, the Indian Ocean Marine Affairs Cooperation Conference; the cooperation between the States of the South Atlantic Zone of Peace; and the Caribbean Community.

15/ For instance, a joint IOMAC/United Nations-OALOS/FAO/IOC technical mission with the support of UNDP assisted Mauritius, Seychelles and the United Republic of Tanzania.

16/ Fifty-one of the 60 ratifications or accessions required for entry into force of the Convention had been deposited as at 20 November 1991.

17/ Reiterated in annual resolutions of the General Assembly under the item Law of the sea (resolutions 45/145 and 44/26, as recent examples).

18/ The 10 regional action plans are: Mediterranean, South-East Pacific, East Asian Seas, Caribbean, West and Central Africa, South Pacific, Kuwait, Eastern Africa, Red Sea and Gulf of Aden, and South Asian Seas.

19/ UNEP, Sixth Interagency Consultations on Oceans and Coastal Areas Programme, Geneva, 4-7 September 1988.

20/ Woolsey, J. R. and Bargeron, D. L., "Exploration for phosphorite in the offshore territories of the People's Republic of Congo, West Africa", in Marine Mining, vol. 5, No. 3, 1986.

21/ ESCAP, Guidelines for Maritime Legislation, 2nd ed. (ST/ESCAP/380) (currently being revised and updated).

22/ For example, the 1983 United Nations Convention on a Code of Conduct for Linear Conference; the 1980 United Nations Convention on International Multimodal Transport of Goods; the 1978 United Nations Convention on the Carriage of Goods by Sea (Hamburg Rules); the 1986 United Nations Convention on Conditions for Registration of Ships; the 1987 Model Clauses on Marine Hull and Cargo Insurance; establishment of a Maritime Advisory Exchange (Marine Fraud Prevention Exchange) in 1988.